

Jan. 8, 1952

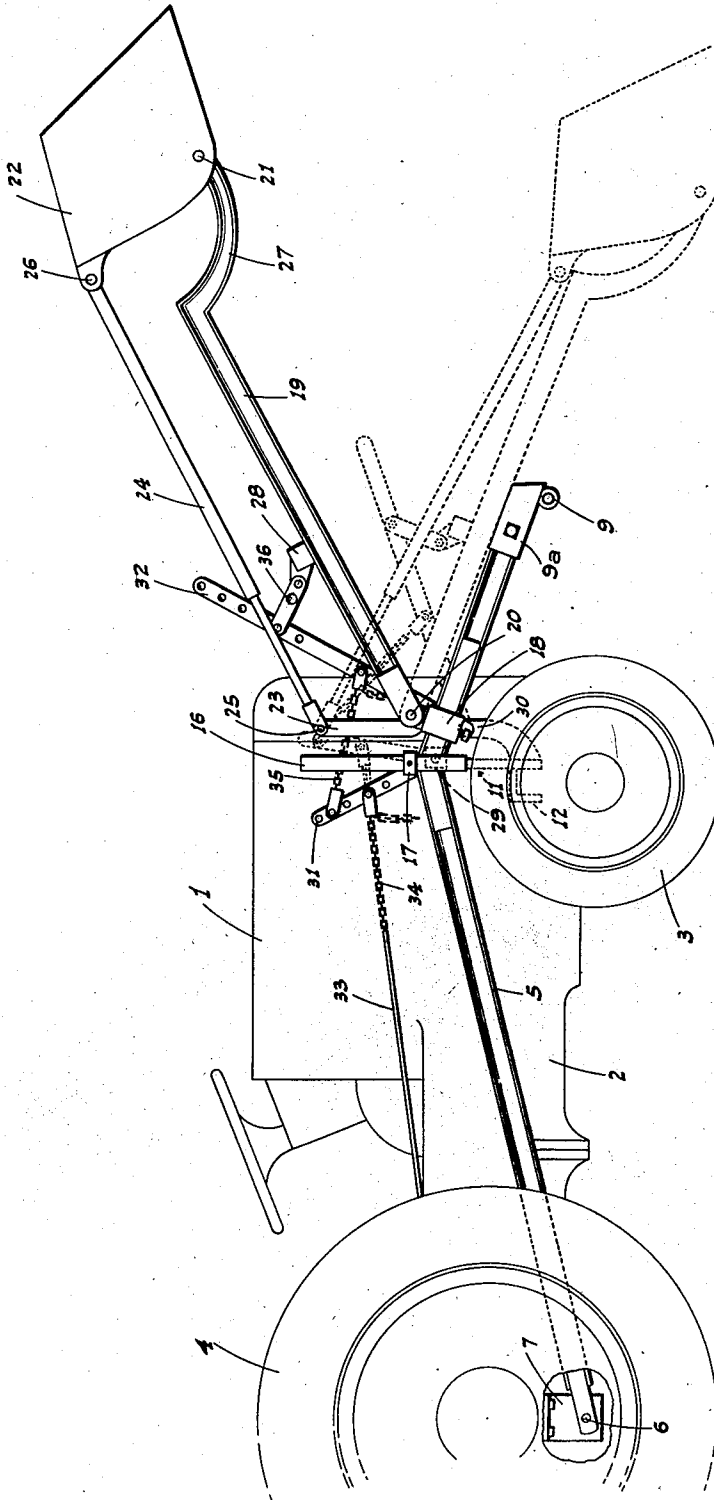
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2,581,731

FRONT END IMPLEMENT MOUNT FOR TRACTORS

Filed May 4, 1948

2 SHEETS--SHEET 1.



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2 SHEETS—SHEET 2

Fig. 2

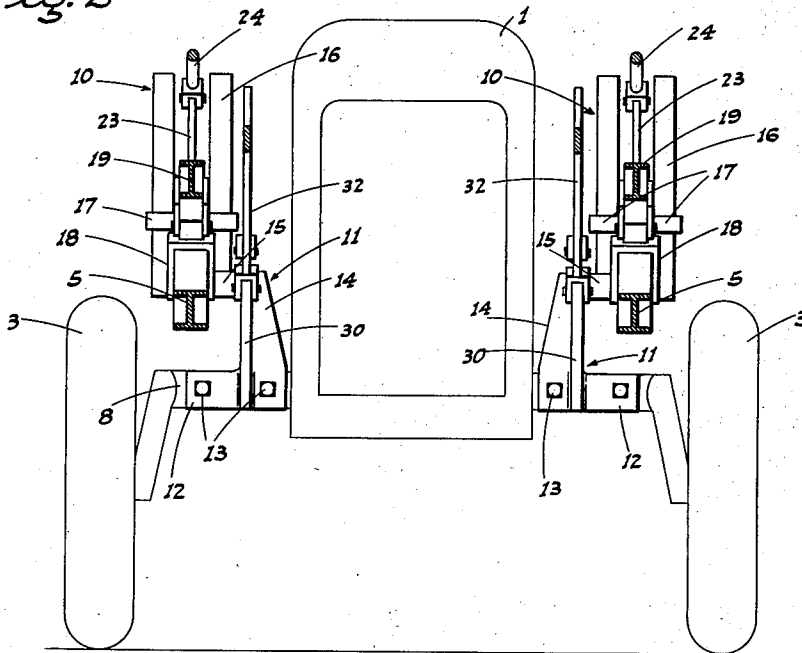
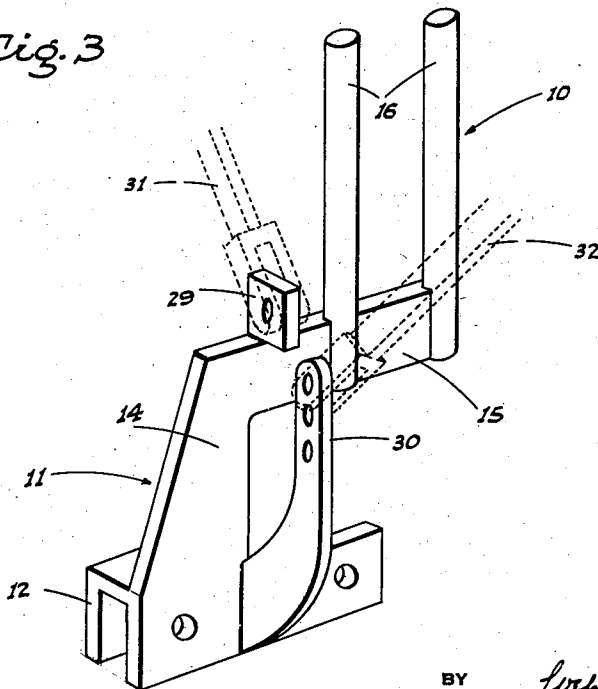


Fig. 3



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2,581,731

FRONT END IMPLEMENT MOUNT FOR TRACTORS

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Application May 4, 1948, Serial No. 25,038

8 Claims. (Cl. 214-140)

1

This invention relates to, and it is an object to provide, a novel, front end implement mount for tractors; such mount being adapted for use in connection with a push beam assembly secured to the tractor. A push beam assembly of the type with which the mount is adapted to be used is shown in copending application, Serial No. 726,141, filed February 3, 1947, and now Patent No. 2,485,334, issued October 18, 1949.

Another object of the present invention is to provide a mount, as above, which is especially adapted for use with vertically movable front end implements, such as the scoop here illustrated.

An additional object of the invention is to provide a mount, as in the preceding paragraph, which is power actuated from the tractor in a novel manner whereby to raise or lower the supported implement; the mount being adjustable, without requiring more than simple resetting of the lift mechanism associated with said mount.

At the same time, the present device is arranged so that it can also be used for the same purpose as recited in said co-pending application; the scoop-mounting assembly being removed from the main push-beam unit.

A further object of the invention is to provide a practical and reliable mount for front end implements on a tractor, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a side elevation of a front end implement mounted in connection with a tractor by means of the improved mount.

Fig. 2 is a transverse sectional elevation taken through the mount directly ahead of the tractor, but rearwardly of the implement.

Fig. 3 is an enlarged perspective view, detached, of the combination bracket and cradle unit.

Referring now more particularly to the characters of reference on the drawings, the mount is here shown in connection with a tractor 1 which includes a main frame 2 supported by front wheels 3 and rear wheels 4.

Push beams 5 are disposed on opposite sides of the main frame 2 and extend longitudinally in a forward direction from pivotal connection, as at 6, with attachment plates 7 secured to and projecting downwardly from the rear axle housing of the tractor.

2

From the pivots 6 the push beams 5 extend at a forward and upward incline to a point substantially directly above the front axle 8, whence said push beams are bent and extend forwardly at a downward incline to a termination ahead of the wheels 3. At their forward ends the push beams 5 include an attachment element 9 for securing said push beams to certain types of front end elements, and in this connection the arrangement is similar to that shown in the identified copending application, Serial No. 726,141. A further similarity resides in the incorporation of an upstanding cradle 10 to receive and guide each push beam 5.

The mount which comprises the essence of the present invention is arranged in association with the push beams 5 and front axle 8 of the tractor, as follows:

On opposite sides of the tractor the axle 8 is fitted with a combination bracket and cradle unit, indicated generally at 11; such unit including a saddle 12 secured to the axle 8 by bolts 13. A bracket 14 upstands from each saddle 12 and includes a laterally outwardly projecting horizontal arm 15. This arm 15 carries a pair of transversely spaced, upstanding bars 16 which form the cradle 10 for the reception of the corresponding push beam 5.

To normally prevent upward motion of each push beam 5, as when the described mount is in use and vertical motion of said push beams is unnecessary, at least one of each pair of the upstanding bars 16 is fitted with a stop or hold-down collar 17.

Ahead of the corresponding cradle 10 each push beam 5 is fitted with an attachment block 18 which is normally fixed but vertically adjustable along the forwardly and downwardly inclined front end portion of said push beam.

Longitudinal lift arms 19 are pivoted, at their rear ends, as at 20, to corresponding attachment blocks 18, and thence extend forwardly therefrom to pivotal connection, as at 21, in transversely spaced relation to a front end implement, such as the scoop 22 here illustrated.

Each attachment block 18 includes a rigid upstanding post 23, and longitudinal control arms 24 are pivoted, at their rear ends, as at 25, to the upper end of the rigid posts 23. At their forward ends the control arms 24 are pivoted, in transversely spaced relation, as at 26, to the scoop 22 above the pivots 21.

The longitudinal lift arms 19 include a downwardly extending portion 27 at their forward ends

whereby to normally maintain said lift arms in substantial clearance relation to the ground.

The longitudinal lift arms 19 are connected together, in unitary relation, by a cross bar 28.

With the above described arrangement of the longitudinal lift arms 19 and longitudinal control arms 24, it will be seen that the scoop 22 may be swung from a lowered position, as in dotted lines, to a raised position, as in full lines, in Fig. 1, with the scoop maintained in proper position throughout the range of its movement.

The assembly of the arms 19 and 24 is power actuated to raise or lower the implement 22, by means of the following lift mechanism.

Each of the combination bracket and cradle units 11 includes a pair of attachment ears, indicated at 29 and 30, and upstanding rear and front swing levers 31 and 32 are pivoted, at their lower ends, to said ears 29 and 30, respectively. The swing levers 31 and 32 extend upwardly in diverging relation and are pivoted for swinging motion lengthwise of the tractor.

Actuating rods 33 extend forwardly from the rear end power mechanism (not shown) of the tractor, which mechanism is operative at the selection of the tractor driver to cause the actuating rods 33 to be shifted either rearwardly or forwardly.

The actuating rods 33 correspond to, and are disposed directly above, the push beams 5, and said rods 33 are attached at their forward end to chains 34 which adjustably connect to the rear swing levers 31 intermediate the ends of the latter.

Other chains 35 adjustably connect between the rear swing levers 31, at a point above the chains 34, and the front swing levers 32 intermediate the ends of the latter.

Links 36 corresponding to the longitudinal lift arms 19 pivotally connect with the cross bar 28 and the corresponding front swing levers 32 in adjustable relation to the latter.

With the above described lift mechanism it will be understood that when the actuating rods 33 are pulled rearwardly the rear swing levers 31 and front swing levers 32 are swung in a corresponding direction, which pulls upwardly on the links 36, raising the assembly of the arms 19 and 24, together with the front end implement 22, which is here the illustrated scoop.

Conversely, forward movement of the rods 33 causes lowering of said assembly of the arms and implement.

With the described mount and lift mechanism, the front end implement can be adjusted longitudinally, and to a certain extent vertically, by reason of the slope of the forward end portion of the push beams, by settling the attachment blocks 18 at selected positions along said portions of the push beams. When this is done the lift mechanism is adjusted easily by re-connecting links 36 to the front swing levers 32 to an appropriate position, and by varying the lengths of chains 34 and 35 as the setting may require.

When the use of scoop 22 and its high-lift mounting is not required, and it is instead desired to connect an implement to cross element 9, it is only necessary to disconnect links 36 from cross bar 28, unclamp slide blocks 18 from beams 5, and slide said blocks off the front end of said beams; the cross element 9 being mounted on removable sleeves 9a normally secured on the beams.

The links 36 are then connected to element 9, which is a rod, by first pulling the latter from its

end bearings on sleeves 9a and then running the rod through holes in the links. The collars 17 are then raised or removed, so as to allow beams 5 to freely float up and down as is desirable when an implement is attached to rod 9.

The above described mount for front end implements on tractors thus provides a very practical and convenient structure, and an arrangement which is adjustable to different working conditions and for different types of front end implements.

From the foregoing description it will be readily seen that there has been produced such a device as substantially fulfills the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations therefrom may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. A front end implement mount for a tractor which includes a pair of transversely spaced push beams having portions extending alongside the tractor adjacent and projecting ahead of its forward end, an attachment block on said portion of each push beam, longitudinal lift arms pivotally attached at its rear end to corresponding blocks and projecting forward therefrom, an implement mounted on the forward end of said lift arms, and mechanism mounted on the tractor and connected in lift relation to said arms; the attachment blocks being adjustable along said portions of the push beams.

2. A front end implement mount for a tractor which includes a pair of transversely spaced push beams having portions extending alongside the tractor adjacent and projecting ahead of its forward end, and attachment block on said portion of each push beam, longitudinal lift arms pivotally attached at its rear end to corresponding blocks and projecting forward therefrom, an implement mounted on the forward end of said lift arms, and mechanism mounted on the tractor and connected in lift relation to said arms; there being a cross member connecting the lift arms in unitary relation, and the attachment blocks being adjustable along said portions of the push beams.

3. A front end implement mount for a tractor, comprising a pair of transversely spaced lift arms projecting ahead of the tractor, attachment members mounted in connection with the tractor on opposite sides and adjacent the front thereof, the lift arms being pivoted at the rear ends to corresponding attachment members for vertical motion, an implement mounted on the lift arms at their outer ends, a pair of longitudinally spaced, upwardly diverging swing levers pivoted in connection with the tractor on each side thereof adjacent the front for longitudinal swinging motion, lift links pivotally connected between the front levers and the lift arms, a direct pull-connection between the levers of each pair, and means connected to the rear levers to swing the same.

4. A front end implement mount for a tractor, comprising a pair of transversely spaced lift arms projecting ahead of the tractor, attachment members mounted in connection with the tractor on opposite sides and adjacent the front thereof, the lift arms being pivoted at the rear ends to corresponding attachment members for vertical

5

6

motion, an implement mounted on the lift arms at their outer ends, a pair of longitudinally spaced, upwardly diverging swing levers pivoted in connection with the tractor on each side thereof adjacent the front for longitudinal swinging motion, lift links pivotally connected between the front levers and the lift arms, elements adjustable as to length connecting the levers of each pair, and other elements adjustable as to length connected in pull relation to the rear levers of said pairs.

5. A front end implement mount for a tractor, comprising a pair of transversely spaced lift arms projecting ahead of the tractor, attachment members mounted in connection with the tractor on opposite sides and adjacent the front thereof, the lift arms being pivoted at the rear ends to corresponding attachment members for vertical motion, an implement mounted on the lift arms at their outer ends, the tractor including a front axle, bracket units connected to the axle on opposite sides of the tractor, a pair of longitudinally spaced, upwardly diverging swing levers pivoted in connection with each bracket unit for longitudinal swinging motion, lift links pivotally connected between the front levers and the lift arms, connecting means between the levers of each pair, and means connected to the rear levers to swing the same; both said means including longitudinal elements adjustable as to length.

6. A front end implement mount for a tractor, comprising a pair of transversely spaced lift arms projecting ahead of the tractor, attachment members mounted in connection with the tractor on opposite sides and adjacent the front thereof, the lift arms being pivoted at the rear ends to corresponding attachment members for vertical motion, an implement mounted on the lift arms at their outer ends, the tractor including a front axle, bracket units connected to the axle on opposite sides of the tractor, a pair of longitudinally spaced, upwardly diverging swing levers pivoted in connection with each bracket unit for longitudinal swinging motion, lift links pivotally connected between the front levers and the lift arms, connecting means between the levers of each pair, and means connected to the rear levers to swing the same; the tractor including a pair of transversely spaced push beams having portions extending alongside the tractor adjacent and projecting ahead of its forward end, and said attachment members being secured to said portions of the push beams.

7. A front end implement mount for a tractor

which includes a pair of transversely spaced push beams having portions extending alongside the tractor adjacent and projecting ahead of its forward end, the tractor including a front axle below the push beams, attachment bracket units on the axle below the push beams, cradles on the bracket units receiving the push beams, a pair of longitudinal lift arms corresponding and connected at the rear end to said portions of the push beams and projecting ahead of the latter, a pair of upwardly divergent swing levers pivotally connected at the lower ends to each bracket unit for swinging motion in a longitudinal vertical plane, lift links pivotally connected between the front levers and the lift arms, connecting means between the levers of each pair, and means connected to the rear levers to swing the same.

8. A front end implement mount for a tractor which includes a pair of transversely spaced push beams having portions extending alongside the tractor adjacent and projecting ahead of its forward end, the tractor including a front axle below the push beams, attachment bracket units on the axle below the push beams, a pair of longitudinal lift arms corresponding and connected at the rear end to said portions of the push beams and projecting ahead of the latter, a pair of upwardly divergent swing levers pivotally connected at the lower ends to each bracket unit for swinging motion in a longitudinal vertical plane, lift links pivotally connected between the front levers and the lift arms, connecting means between the levers of each pair, and means connected to the rear levers to swing the same; there being attachment members securing the lift arms to said portions of the push beams, a post upstanding from each attachment member, and other arms connected between the posts and the implement above the lift arms.

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